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**CELL SURFACE PROTEINS AND USE THEREOF AS  
INDICATORS OF ACTIVATION OF CELLULAR SIGNAL  
TRANSDUCTION PATHWAYS**

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**Abstract**

The present invention makes available a rapid, reproducible, robust assay system for screening and identifying pharmaceutically effective compounds that specifically interact with and modulate the activity of a cellular protein, *e.g.*, a receptor or ion channel. The subject assay enables rapid screening of large numbers of compounds to identify those which act as an agonist or antagonist to the bioactivity of the cellular protein. In this system, the cell is treated with a compound, and functional interaction of this compound with a cellular receptor yields a detectable signal, which can be specifically measured. The subject assays include methods of identifying compounds which specifically modulate, for example, heterologous receptors coupled to the pheromone response pathway in yeast. The subject assays are particularly amenable to the identification of specific agonists and antagonists of G protein-coupled receptors.